

Message Text

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ACTION NEA-10

INFO OCT-01 ISO-00 EB-07 OES-03 AGR-05 L-03 NSF-01 ACDA-05

CEQ-01 CIAE-00 DODE-00 INR-07 NSAE-00 PA-01 USIA-06

PRS-01 SP-02 AID-05 (ISO) W

----- 115636

R 091005Z JUL 75

FM AMCONSUL MADRAS

TO AMEMBASSY NEW DELHI

INFO SECSTATE WASHDC 2967

USDOC WASHDC

AMCONSUL BOMBAY

AMCONSUL CALCUTTA

LIMITED OFFICIAL USE SECTION 1 OF 2 MADRAS 0925

E.O. 11652: N/A

TAGS: BEXP, IN

SUBJECT: CLOUD SEEDING PROJECT

1. FRED E. CLARK, CHIEF ENGINEER, ATMOSPHERICS INCORPORATED, 5652 EAST DAYTON AVENUE, FRESNO, CALIFORNIA, ARRIVED MADRAS JULY 7 WITH HIS WIFE AND 13-YEAR OLD DAUGHTER TO SUPERVISE SETTING UP CLOUD SEEDING PROJECT.

2. CLARK VISITED CONGEN AFTERNOON OF JULY 8 FOR BRIEFING. HE SAID ALL DETAILS OF HIS ARRIVAL AND IMPORTATION OF RADAR AND OTHER EQUIPMENT ARE PROCEEDING SMOOTHLY AND RAPIDLY. GROUNDWORK SEEMS TO HAVE BEEN WELL LAID BY AGRICULTURE SECRETARY CHOCKALINGAM AND HIS STAFF. JOINT DIRECTOR OF AGRICULTURE K. NARASINHALU HAS BEEN ASSIGNED AS CLARK'S LIAISON OFFICER WITH OTHER GOVERNMENT BODIES. SEVERAL OFFICERS UNDER NARASINHALU, PLUS NUMBER OF CARS AND DRIVERS, HAVE BEEN AVAILABLE AT ALL TIMES TO GET EVERYTHING TAKEN CARE OF FROM FUEL AND HANGER SPACE AND MEETINGS WITH METEOROLOGICAL AND AIR TRAFFIC CONTROL PERSONNEL AT THE AIRPORT, TO SETTLING INTO THE ADMIRALITY HOTEL (FORMER LIMITED OFFICIAL USE

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AID STAFF FLATS), SHOPPING FOR GROCERIES, AND GETTING

LIQUOR PERMITS.

3. CLARK EXPECTS AIRCRAFT, WHICH HAS RANGE OF 14 HOURS OR ABOUT 3,000 MILES WITH EXTRA FUEL TANKS, AND WHICH WILL BE PILOTED ACROSS ATLANTIC BY ONE MAN, TO ARRIVE JULY 10. A METEOROLOGIST WILL ARRIVE VIA COMMERCIAL FLIGHT ABOUT THE SAME TIME TO COMPLETE THE CREW. HENDERSON, PRESIDENT OF AI, IS PERSONALLY MANAGING MAJOR WEATHER MODIFICATION PROGRAM IN ST. LOUIS AND WILL COME TO INDIA IN ABOUT FIVE OR SIX WEEKS' TIME. CLARK SAID IT IS POSSIBLE THAT IF THINGS GO WELL BETWEEN NOW AND OCTOBER, CONSIDERATION WILL BE GIVEN TO CONDUCTING A CLOUD SEEDING PROGRAM DURING THE NORTHEAST MONSOON WHICH RUNS FROM THE END OF OCTOBER TO MID-DECEMBER.

4. CLARK SAID CLOUD SEEDING IS ACCOMPLISHED BY LOCATING, WITH HELP OF RADAR AND WEATHER BALLOONS, STORM CLOUD CELLS WHICH SHOW STRONG UPDRAFT ACTIVITY WITH STREAMS OF MOIST AIR FLOWING INTO BASE OF CLOUD AND RISING. SILVER IODIDE FLARES, BASICALLY SAME AS COMMON HIGHWAY FLARES, ARE IGNITED AND PARTICLES THEY RELEASE SCATTERED INTO THE INFLOWING STREAMS OF AIR AT THE BASE OR MIDDLE OF THE THUNDERHEAD. THEY ARE THUS CONDUCTED INTO THE CENTER OF THE STORM AND ACT AS NUCLEI AROUND WHICH WATER DROPLETS WILL CONDENSE. THE CONDENSATION RELEASES HEAT WHICH STRENGTHENS THE UPDRAFT AND LEADS TO MORE CONDENSATION. APPROXIMATELY TWENTY MINUTES ARE NEEDED FROM THE TIME SEEDING BEGINS FOR RAIN TO FALL. SEEDING CAN ALSO BE ACCOMPLISHED BY DROPPING PARTICLES DIRECTLY INTO THE TOPS OF LOWER CLOUDS.

5. CLARK SAID RAIN CANNOT BE CREATED WHERE NO CLOUDS EXIST, BUT THAT IN CLOUDY SITUATION SUCH AS EXISTS IN TAMIL NADU NOW IT SHOULD DEFINITELY BE POSSIBLE TO ACHIEVE AN INCREASE OF TEN PERCENT IN TOTAL RAINFALL. THIS, HE SAID, HAS BEEN POSSIBLE TO DOCUMENT IN PARTS OF THE U.S. WHERE ACCURATE RAINFALL RECORDS GO BACK AS MUCH AS 100 YEARS. SUCH COMPLETE STATISTICS DO NOT EXIST HERE, AND PROOF IS HARDER TO DEMONSTRATE. HE SAID AI IS METICULOUS ABOUT KEEPING DETAILED RAINFALL FIGURES AND OTHER RECORDS DURING ITS OPERATIONS, AND WILL TURN OVER A VERY THOROUGH TECHNICAL LIMITED OFFICIAL USE

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REPORT TO THE INDIANS WHICH WILL HELP GIVE THEM A BASE FOR EVALUATING FUTURE CLOUD SEEDING PROGRAMS. HE ADDED THAT THE METEOROLOGICAL DEPARTMENT HAD AGREED TO ADJUST ALL OF ITS WEATHER STATIONS IN THE STATE TO TAKE DAILY RAINFALL READINGS, AND THIS WOULD HELP GIVE AN IDEA OF WHAT THE EFFECT OF THE PROGRAM WOULD BE.

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ACTION NEA-10

INFO OCT-01 ISO-00 EB-07 OES-03 AGR-05 L-03 NSF-01 ACDA-05

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6. WE BRIEFED CLARK CAREFULLY ON THE GENERAL SITUATION IN INDIA FOLLOWING THE EMERGENCY, THE POTENTIAL FOR POLITICALLY MOTIVATED ATTACKS ON AMERICAN SCIENTIFIC PROGRAMS HERE, INTERSTATE WATER DISPUTES THAT COULD BE DRAGGED IN, AND THE PITFALLS HE MIGHT STUMBLE INTO FROM PROFESSIONAL AND BUREAUCRATIC RIVALRIES AND JEALOUSIES. CLARK SEEMED TO GRASP ALL OF THIS WITHOUT MUCH TROUBLE, HAVING HAD CONSIDERABLE FOREIGN EXPERIENCE IN KENYA, SOUTH AFRICA AND THE PACIFIC. HE READILY AGREED TO OUR SUGGESTION THAT HERE THE TERM WEATHER MODIFICATION COULD HAVE SLIGHTLY SINISTER OVERTONES, CONNOTING ECOLOGICAL WARFARE AND VIETNAM, AND THAT THE PLAINER TERMS RAIN MAKING OR CLOUD SEEDING WOULD SERVE BETTER BECAUSE THEY HAD NO ECHOES OF HUCKSTERISM IN INDIA AND RELATED MORE GRAPHICALLY TO JUST WHAT ORDINARY FOLK HERE WANTED, MORE RAIN. CLARK ALSO TOLD US HE HAD SENSED SOME DEFENSIVENESS ON THE PART OF THE MAN WHO WILL BE HIS MOST FREQUENT DAILY WORKING CONTACT, MR. S.D. WILLIAMS, THE HEAD OF THE MADRAS AIRPORT OBSERVATORY WHICH COMES UNDER THE GOI METEOROLOGICAL DEPARTMENT. WILLIAMS, CLARK SAID,

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HAD A VERY SOUND GRASP OF ALL THE TECHNOLOGY INVOLVED, AND HE GUESSED WILLIAMS MIGHT HAVE BEEN ANTICIPATING CONDESCENSION. CLARK SAID HE HAD WORKED THINGS OUT WITH WILLIAMS AND HIS BOSS, DR. A.A. RAMA SASTRY, AND THE WAY NOW SEEMED CLEAR FOR GOOD COOPERATION.

7. BOTH ENGLISH AND VERNACULAR PRESS HAVE GIVEN WIDE COVERAGE TO CLARK'S ARRIVAL AND CLOUD SEEDING PROGRAM. PRESS CONFERENCE HELD JULY 7 BY CHOCKALINGAM RIGHT AFTER CLARK ARRIVED WAS FACTUAL AND STRAIGHT FORWARD, WITH HOPEFUL BUT NOT OVER OPTIMISTIC TONE. ANOTHER PRESS MEETING WAS HELD JULY 8, AND CLARK'S PICTURE APPEARED IN VERNACULAR PAPERS. CLARK SAID HE IS BEING CAREFUL NOT TO SAY MUCH AND LEAVES THE TALKING TO CHOCKALINGAM.
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